

AMENDMENTS TO THE CLAIMS

1-2. (Canceled)

3. (Currently Amended) A file-update apparatus which is able to mount a removable first recording medium, and execute a plurality of update procedures to update a file on the first recording medium, said file-update apparatus comprising:

a second recording medium;

a progress recording unit operable to record, onto said second recording medium, progress information showing which of the plurality of update procedures have been executed in updating the file;

a new-data recording unit operable to record, onto the first recording medium, data constituting a content of the file after updating the file, in a different storage location from data constituting a content of the file before updating the file;

an update information recording unit operable to record, onto said second recording medium, update information showing the storage location, on the first recording medium, of the data constituting the content of the file after updating the file;

an updating unit operable, after the update information has been recorded onto said second recording medium, and if no interruption of the update procedures has taken place, to update location information on the first recording medium based on the update information, so as to show the storage location of the data constituting the content of the file after updating the file;

a recovery unit operable, if an interruption of the update procedures has taken place,

and if a predetermined condition is satisfied, to determine which of the plurality of update procedures has been executed based on the progress information, and on a basis of the determination, to update the location information on the first recording medium so as to show the storage location of the data constituting one of the content of the file after updating the file or the content of the file before updating the file;

~~The file-update apparatus of claim 2, further comprising:~~

an ID recording unit operable, before the updating of the file, to read unique medium identifier information from the first recording medium, and to hold the medium identifier information within the said file-update apparatus; and

a ~~re-update~~ recovery suppressing unit operable to read medium identifier information from a removable recording medium mounted in ~~the~~ the said file-update apparatus, compare the read medium identifier information with the held medium identifier information, and suppress the updating of the location information by ~~the re-updating~~ said recovery unit if the read medium identifier information does not match the held medium identifier information.

4. (Currently Amended) The file-update apparatus of claim ~~[[2]]~~3, wherein the location information shows storage locations of data constituting contents of all files on the first recording medium,

~~the said~~ the said file-update apparatus targets a plurality of the files for updating,

~~the said~~ the said progress recording unit records progress information for each targeted file,

~~the said~~ the said new-data recording unit conducts, for each targeted file, the recording, onto

the first recording medium, of data constituting a content of the file after updating,

~~the~~ said update information recording unit conducts the recording of update information, for each file that has undergone data recording by ~~the~~ said new-data recording unit,

~~the~~ said updating unit conducts, for each file for which update information has been recorded, the updating of location information based on the update information of the file, and

~~the re-updating~~ said recovery unit, if an interruption of the update procedures has taken place, and if the predetermined condition is satisfied, conducts the updating of location information for each file, when judged, based on the progress information of the file, that update information relating to the file has been recorded.

5. (Currently Amended) The file-update apparatus of claim 4, further comprising:

a close instruction receiving unit operable to receive a close instruction relating to individual files that have undergone data recording by ~~the~~ said new-data recording unit, wherein

the progress information includes information for identifying whether a close instruction has been received,

~~the~~ said updating unit conducts, for each file, the updating of location information, only after update information relating to the file has been recorded and a close instruction relating to the file has been received, and

~~the re-updating unit~~ said recovery unit, if an interruption of the update procedures has

taken place, and if the predetermined condition is satisfied, conducts the updating of location information for each file, only when judged, based on the progress information of the file, that update information relating to the file has been recorded and a close instruction-relating to the file has been received.

6. (Currently Amended) The file-update apparatus of claim 4, wherein

the first recording medium stores (i) FAT information showing, for each of a plurality of clusters on the first recording medium, whether data constituting any file content is stored in the cluster, and that clusters storing data constituting the content of the same file are linked, and (ii) directory information showing, for each file on the first recording medium, the first cluster storing data constituting the content of the file,

the location information is formed from the directory information and all FAT information except for unused-cluster information, the unused-cluster being ~~which is~~ FAT information showing clusters that do not store data constituting any file content,

the update information relating to each file that has undergone data recording by ~~the~~ said new-data recording unit is formed from (i) consecutive-relation information showing that clusters storing data constituting the content of the file after updating are linked, and (ii) entry information showing the first cluster storing data constituting the content of the file after updating the file ~~post-update file content~~,

the said updating unit, for each file for which update information has been recorded, updates (i) the FAT information based on the consecutive-relation information of the file, so

as to show that clusters storing data constituting the content of the file after updating are linked, and (ii) directory information relating to the file based on the entry information of the file, so as to show the first cluster storing data constituting the content of the file after updating the file ~~post-update file content~~, and

~~the re-updating~~ said recovery unit updates the location information by updating the FAT information based on the consecutive-relation information and the directory information based on the entry information.

7. (Currently Amended) The file-update apparatus of claim 6, further comprising:
an area-release unit operable, for each file for which update information has been recorded, to record, onto ~~the~~ said second recording medium, free-space information showing that clusters which stored data constituting the content of the file before updating do not store data constituting any file content, wherein

~~the~~ said updating unit conducts the updating of the FAT information so that the free-space information is reflected in the unused-cluster information, and

~~the re-updating~~ said recovery unit conducts the updating of the FAT information so that the free-space information is reflected in the unused-cluster information.

8. (Currently Amended) The file-update apparatus of claim 7, further comprising:
a FAT-information copying unit operable, before the updating of any of the files, to copy the FAT information on the first recording medium into a working FAT area on ~~the~~ said

second recording medium, as working FAT information; and

a close instruction receiving unit operable to receive a close instruction relating to individual files that have undergone data recording by the said new-data recording unit, wherein

the progress information includes information for identifying whether a close instruction has been received,

~~the said new-data recording unit records data constituting the content of the file after updating the file post-update file content into clusters not storing data constituting other post-update file content,~~ based on (i) the working FAT information and (ii) the used-area information or the consecutive-relation information,

the said update information recording unit makes the working FAT information reflect (i) the consecutive-relation information of each file for which a close instruction has been received, and (ii) free-space information that shows clusters which stored data constituting the content of the file before updating do not store data constituting any file content,

the said updating unit updates the FAT information based on the working FAT information, and

~~the re-updating said recovery unit, if an interruption of the update procedures has taken place, and~~ if the predetermined condition is satisfied, (i) makes the working FAT information reflect, for each file, consecutive-relation information and free-space information that relate to the file, when judged, based on the progress information of the file, that a close instruction relating to the file has been received, (ii) updates the FAT information based on the working

FAT information, and (iii) updates the directory information based on the entry information of each file whose progress information shows that a close instruction has been received.

9. (Currently Amended) The file-update apparatus of claim 8, further comprising:
an update instruction receiving unit operable, at a time of ~~re-updating~~ recovery, to receive an update instruction indicating that if the first recording medium stores data constituting post-update file content, the location information is to be updated so as to show the storage location of the data, wherein

~~the re-updating~~ said recovery unit, if an interruption of the update procedures has taken place, and if the predetermined condition is satisfied and the update instruction has been received, makes the working FAT information, prior to use in updating the FAT information, reflect for each file, consecutive-relation information and free-space information that relate to the file, when judged, based on the progress information of the file, that update information relating to the file has been recorded.

10. (Currently Amended) The file-update apparatus of claim ~~[[1]]~~ 3, wherein
the first recording medium includes an authentication area and a normal area that are mutually independent, a predetermined access restriction applying to only the authentication area of the two areas,

the location information is formed from (i) first location information showing storage locations, within the authentication area, of data constituting contents of all files in the

authentication area, and (ii) second location information showing storage locations, within the normal area, of data constituting contents of all files in the normal area,

the progress information is formed from (i) first progress information showing, for each file in the authentication area, which of the update procedures have been executed in updating the file, and (ii) second progress information showing, for each file in the normal area, which of the update procedures have been executed in updating the file,

~~the~~ said new-data recording unit (i) conducts, for each file in the authentication area targeted for updating, the recording, into the authentication area, of data constituting a content of the file after updating, and (ii) conducts, for each file in the normal area targeted for updating, the recording, into the normal area, of data constituting a content of the file after updating,

the update information is formed from (i) first update information showing, for each file in the authentication area that has undergone data recording by the new-data recording unit, the storage location, within the authentication area, of data constituting the post-update file content, and (ii) second update information showing, for each file in the normal area that has undergone data recording by the new-data recording unit, the storage location, within the normal area, of data constituting the post-update file content, and

~~the~~ said updating unit (i) conducts, for each file in the authentication area for which first update information has been recorded, the updating of first location information based on the first update information of the file, and (ii) conducts, for each file in the normal area for which second update information has been recorded, the updating of second location information based on the second update information of the file.

11. (Currently Amended) The file-update apparatus of claim ~~[[1]]~~ 3, wherein the first recording medium is a flash memory, and ~~the said~~ second recording medium is a memory that is accessible faster than the first recording medium.

12. (Currently Amended) The file-update apparatus of claim 11, wherein ~~the said~~ second recording medium is a RAM, and has power supplied by a power source that is independent from a power source of the first recording medium.

13-15. (Canceled)

16. (New) A file-update method for executing a plurality of update procedures to update a file on a first recording medium, said file-update method comprising:

recording, onto a second recording medium, progress information showing which of the update procedures have been executed in updating the file;

recording, onto the first recording medium, data constituting a content of the file after updating the file, in a different storage location from data constituting a content of the file before updating the file;

recording, on the second recording medium, update information showing the storage location, on the first recording medium, of the data constituting the content of the file after updating the file;

updating, after the update information has been recorded onto the second recording medium, and if no interruption of the update procedures has taken place, location information on the first recording medium based on the update information, so as to show the storage location of the data constituting the content of the file after updating the file;

determining, if an interruption of the update procedures has taken place, and if a predetermined condition is satisfied, which of the plurality of update procedures has been executed based on the progress information, and on a basis of said determining, updating the location information on the first recording medium, so as to show the storage location of the data constituting one of the content of the file after updating the file or the content of the file before updating the file;

reading, before the updating of the file, unique medium identifier information from the first recording medium, and holding the medium identifier information within a file-update apparatus; and

reading, when said determining step is performed, medium identifier information from a recording medium of a processing target, comparing the read medium identifier information with the held medium identifier information, and suppressing the updating of the location information if the read medium identifier information does not match the held medium identifier information.

17. (New) A computer program recording medium on which a program is recorded, the program being for causing a computer to execute a file-update method for executing a

plurality of update procedures to update a file on a first recording medium, said file-update method comprising:

recording, onto a second recording medium, progress information showing which of the update procedures have been executed in updating the file;

recording, onto the first recording medium, data constituting a content of the file after updating the file, in a different storage location from data constituting a content of the file before updating the file;

recording, on the second recording medium, update information showing the storage location, on the first recording medium, of the data constituting the content of the file after updating the file;

updating, after the update information has been recorded onto the second recording medium, and if no interruption of the update procedures has taken place, location information on the first recording medium based on the update information, so as to show the storage location of the data constituting the content of the file after updating the file;

determining, if an interruption of the update procedures has taken place, and if a predetermined condition is satisfied, which of the plurality of update procedures has been executed based on the progress information, and on a basis of said determining, updating the location information on the first recording medium, so as to show the storage location of the data constituting one of the content of the file after updating the file or the content of the file before updating the file;

reading, before the updating of the file, unique medium identifier information from the

first recording medium, and holding the medium identifier information within a file-update apparatus; and

reading, when said determining step is performed, medium identifier information from a recording medium of a processing target, comparing the read medium identifier information with the held medium identifier information, and suppressing the updating of the location information if the read medium identifier information does not match the held medium identifier information.